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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/619,759	07/14/2003	Carsten Hamm	HAMM	7386

20151 7590 01/08/2007	EXAMINER	
HENRY M FEIEREISEN, LLC	FERRIS III, FRED O	
350 FIFTH AVENUE		
SUITE 4714	ART UNIT	PAPER NUMBER
NEW YORK, NY 10118	2128	

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	01/08/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE _3_ MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on _13 October 2006_.

2a)☒ This action is **FINAL**.   2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) _1,3-5,7-15,17-21 and 23-29_ is/are pending in the application.

　　4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) _1,3-5,7-15,17-21 and 23-29_ is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on _31 October 2006_ is/are: a)☒ accepted or b)☐ objected to by the Examiner.

　　Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

　　Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

　　a)☒ All　b)☐ Some *　c)☐ None of:

　　　　1.☒ Certified copies of the priority documents have been received.

　　　　2.☐ Certified copies of the priority documents have been received in Application No. _____.

　　　　3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

　　* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☐ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _10/31/06_.

4)☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.

5)☐ Notice of Informal Patent Application (PTO-152)

6)☐ Other: _____.

DETAILED ACTION

1.   *Claims 1-29 have been presented for examination based on applicant's*

amendment filed 31 October 2006. Applicants have now cancelled claims 2, 6,

16, and 22. Claims 1, 3-5, 7-15, 17-21, and 23-29 remain pending in this

application and remain rejected by the examiner.

Response to Arguments

2.   *Applicant's arguments filed 31 October 2006 have been fully considered.*

Regarding applicants' response to drawing objections: The examiner

withdraws the objection to Figure 2 in view of applicants replacement sheet filed

31 October 2006.

Regarding applicants' response to IDS objection: Applicants request for

the examiner to consider the documents listed in the Information Disclosure

Statement has not met the requirements of MPEP 609.

MPEP 609.04(a) recites the following:

III. CONCISE EXPLANATION OF RELEVANCE FOR NON-ENGLISH
LANGUAGE INFORMATION
*Each information disclosure statement must further include a **concise explanation of the***
***relevance**, as it is presently understood by the individual designated in 37 CFR 1.56(c)*
most knowledgeable about the content of the information listed that is not in the English
language. The concise explanation may be either separate from the specification or part
of the specification. If the concise explanation is part of the specification, the IDS listing
should include the page(s) or line(s) numbers where the concise explanation is located in
the specification.

Accordingly, the examiner has not considered the documents listed on the IDS pending submission of a concise explanation of the relevance of the non-English documents as required by MPEP 609.

Regarding applicants' response to specification objections: The examiner withdraws the objection to specification in view of applicants' amendment to the specification filed 31 October 2006.

Regarding applicants' response to 101 rejections: The examiner withdraws the 101 rejection in view of applicants' amendment to the claims filed 31 October 2006.

Regarding applicants' response to 112(1/2) rejections: The examiner withdraws the previous 112(1/2) rejections in view of applicants' amendment to the claims and supporting arguments that a skilled artisan would know how to implement the claimed control simulation and mechanical model. However, applicant's amendment has now necessitated new 112(1) rejections relating to the claimed limitation "interactively adjusting the components". (Please see new 112(1) rejection below.

Regarding applicants' response to 102/103 rejections: The examiner withdraws the previous 102/103 rejections in view of applicants' amendment to the claims filed 31 October 2006. However, applicant's amendment has now necessitated new 103(a) rejections as obvious over Dymola or Elmquist in view of Otter (Please see new 103(a) rejections below).

Information Disclosure Statement

3.   The information disclosure statement filed 14 July 2003 fails to comply

with the provisions of 37 CFR 1.97, 1.98 and MPEP § 609 because the

documents are not translated into the English language and <u>no explanation of</u>

<u>relevance</u> is provided. It has been placed in the application file, but the

information referred to therein has not been considered as to the merits.

Applicant is advised that the date of any re-submission of any item of information

contained in this information disclosure statement or the submission of any

missing element(s) will be the date of submission for purposes of determining

compliance with the requirements based on the time of filing the statement,

including all certification requirements for statements under 37 CFR 1.97(e). See

MPEP § 609.05(a).

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

4.   Claims 1, 3-5, 7-15, 17-21, and 23-29 are rejected under 35 U.S.C. 112,

first paragraph, as failing to comply with the enablement requirement. The

claim(s) contains subject matter which was not described in the specification in

such a way as to enable one skilled in the art to which it pertains, or with which it

is most nearly connected, to make and/or use the invention.

Specifically, the specification does not expressly set forth <u>how</u> a skilled artisan would realize the claimed "interactively adjusting the components" as recited in independent claims 1, 15, and 29. The examiner further notes that the terms "interactively adjusting" or simply "interactively", "adjusting", or "adjust" do not appear in the specification. While the specification makes reference mutual interaction between models (paragraph [0013], for example, there is no specific teachings of any <u>interactive adjustments</u>. For example, exactly what part of the model is interactively adjusted, how is the adjustment accomplished, and what interacts with what? Therefore a skilled artisan would be at odds to determine how the claimed "interactively adjusting the components" is accomplished from the written description contained in the specification. Dependent claims inherit the defects of the claims from which they depend.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5.   *Claims 1, 3-5, 7-15, 17-21, and 23-29 under 35 U.S.C. 103(a) as obvious over "Dymola Dynamic Modeling Laboratory", Version 5.0, Dynasim AB, 1992-2002 or "Modelica – A language for Physical System Modeling, visualization and Interaction", Elmqvist et al, Proceedings of*

International Symposium on CASD, 1999 IEEE, in view of "Modeling of

Multibody Systems with the Object-Oriented Modeling Language Dymola",

Otter et al, 1996 (All of record)

Regarding independent claims 1, 16, and 29: Both Dymola and Elmquist

render obvious the claimed limitations of the present invention as follows:

- system/method and code for simulating a production and/or processing

machine to optimize hardware/controller comprising: (Dymola: pages 15, 24,

31-35, 137-197, Elmquist: Sections 3-5, 7.1)

- (storage) device for mechanical and electrical parameters; (Dymola: pages 16,

24, 72-87,103-133, Elmquist: Sections 3-5, Figs. 3-11) The claimed storage

device would by necessity be inherent to system platforms running Dymola or

Modelica (Elmquist), otherwise the systems could not operate.

- (control) simulator and (mechanical) simulator for simulation of machine and

controller model; (Dymola : 15, 24, 31-35, 137-197, Elmquist: Sections 3-5, 7.1)

The claimed subsets appear as functional equivalents to the submodels of

Dymola as disclosed by Otter (See below: pp. 93, 94, Section 3.0).

- device for model controller/drive for machine based on simulation data;

(Dymola: pages 93-96, Elmquist: Section 2 ,Figs. 1, 2)

As noted above, the claimed features relating to interactive adjusting to

optimize selection of component subsets stands rejected under 112(1).

Accordingly, in view of the limited description contained in applicants'

specification, the examiner interprets this feature as simply the interaction

between the submodels as disclosed by Otter. (see: 112(1) rejection above)

In further regard to system claim 1, the examiner submits that a skilled artisan having access to the teachings of Dymola or Elmquist would have knowingly implemented the apparatus features of a storage device, mechanical simulator, control simulator, and a display by necessity, since for example, platforms running necessity include a storage and display device. Both mechanical and control simulation are rendered obvious by the combination of Dymola or Elmquist and Otter (See; below).

Dymola and Elmquist do not explicitly disclose that a mechanical model and control simulation are interactively adjusted to optimize cooperation between the selection of a subset of components.

Analogous art Otter teaches separate mechanical and controller models and related simulation (Section 2, para:2-4, Figure 1) where component submodels include "through" variables (pp. 94, para;2-5, 97, para:1) that can be passed across components. (The claimed component subsets appear as functional equivalents to the submodels of Otter) Otter further teaches that in Dymola, models are hierarchically grouped as submodels that are connected in accordance with the physical coupling of the components. (See: Abstract, Section 1, para:1) That is, Otter accounts for the interaction between the submodels, and therefore renders obvious the claimed features relating to interactively optimizing between component subsets.

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the teaching of Dymola or Elmquist with the teachings of Otter to realize the elements of the present invention as claimed. An obvious

motivation exists since the prior art teaches that specific class libraries for e.g.

<u>control systems</u> can all be used in conjunction for generating a specific multi-

domain application model. (See: Otter et al, Introduction, paragraph 1)

   *<u>Per claims 3 & 17</u>: mechanical models of the machines as a graphic
representation; (Dymola (entire teaching)/ Elmquist (Sections 2-7))*

   *<u>Per claims 4 & 18</u>: combined performance implemented as an engineering
system; (Dymola, Fig. 1, entire teaching)/ Elmquist: Sections 2-7)*

   *<u>Per claims 5 & 19</u>: computer program for controlling the machine based
on the model of the controller or drive; (Dymola: pages 93-96, Elmquist:
Section 2 ,Figs. 1, 2)*

   *<u>Per claim 20</u>: graphic display for graphical illustration of the simulation
data; (Dymola (pages 69-97, 137-197)/ Elmquist (Sections 2-6)*

   *<u>Per claims 7 & 21</u>: transmits data of the models (i.e. updated) that are set
up by the second device, to the first device, which then generates an updated
model based on the data of the control or drive models, which is in turn used to
have the simulator repeat a mechanical simulation; (Dymola (pages 69-97)/
Elmquist (Sections 2-6)*

   *<u>Per claim 8</u>: for storing information data for hardware components of the
machine; (Dymola (pages 69-197)/ Elmquist (Sections 2-6)*

   *<u>Per claims 9 & 23</u>: stored information data are provided in form of objects
representing the corresponding hardware components;*

   *<u>Per claims 10 & 24</u>: objects assist the first device in setting up the
mechanical model; (Dymola (page 14)/ Elmquist (Section 1)*

   *<u>Per claims 11 & 25</u>: additional memory associated with the second device
for storing images of the objects;(Inherent features to Dymola (entire teaching)/
Elmquist (Sections 2-7)*

   *<u>Per claims 12 & 26</u>: semantics contained in the information data to
generate a computer program; Inherent features to Dymola (pages 69-97)/
Elmquist (Sections 3-7)) Otter teaches control simulator as noted above.*

Per claims 13 & 27: use the same variable names; (Inherent features to
Dymola (page 69)/ Elmquist (Section 3.1)) Otter teaches a control simulation
program (sections 2, 3).

Per claims 14 & 28: system receives data from and/or transmits data to
the machine via an intranet and/or the Internet; (Inherent features to Dymola
(page 14)/ Elmquist (Section 1))

Conclusion

6.   *Applicant's amendment necessitated the new ground(s) of rejection*

presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL.**

See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as

set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire

THREE MONTHS from the mailing date of this action. In the event a first reply is

filed within TWO MONTHS of the mailing date of this final action and the advisory

action is not mailed until after the end of the THREE-MONTH shortened statutory

period, then the shortened statutory period will expire on the date the advisory

action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be

calculated from the mailing date of the advisory action. In no event, however, will

the statutory period for reply expire later than SIX MONTHS from the date of this

final action.

7.   *The prior art made of record not relied upon is considered pertinent to*

applicant's disclosure, careful consideration should be given prior to applicant's

response to this Office Action.

      "Modeling of Multibody Systems with the Object-Oriented Modeling

Language Dymola", Otter et al, 1996 teaches mechanical modeling and

simulation.

      U.S. Patent 7,085,694 issued to Xavier et al teaches mechanical modeling

and simulation.

8.   *Any inquiry concerning this communication or earlier communications from*

the examiner should be directed to Fred Ferris whose telephone number is 571-

272-3778 and whose normal working hours are 8:30am to 5:00pm Monday to

Friday. Any inquiry of a general nature relating to the status of this application

should be directed to the group receptionist whose telephone number is 571-272-

3700. If attempts to reach the examiner by telephone are unsuccessful, the

examiner's supervisor, Kamini Shah can be reached at 571-272-2279. The

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